Blanket chest

made entirely of WOOD

PROJECT GUIDE

DIFFICULTY: Advanced
TIME: 60 hours
TYPE: Furniture

COVER FEATURE

Edward Hopkins explains how to make a wooden catch and hinges for a panelled blanket chest made by Richard Green

A chest is perhaps the most functional piece of furniture it is possible to make. It is after all just a box, but a box of such stature that every untidy house in the country must need one. It is traditional to cram it with silver plates and jewels, ready for a quick getaway. However if, as with me, they've already got away, you can use it for your next most valuable items like the paperbacks you've never read, clothes that don't fit anymore or a spare pillow and a couple of old blankets. Or your entire linen store.

Flexible Construction

This chest is small, designed to sit at the end of a single bed. Yours can be stretched in length and depth while still staying at a convenient

Which wood?

We used pine which comes finished to about 20mm (¾in or ¹³⁄₁₆in) thick. If you prefer to make this chest from a hardwood such as oak or ash, reduce the thickness to 18mm or even 16mm (¾in or ⅝in) otherwise it will look and feel massive.

height to sit on. Make it with three panels for a chest at the end of a double bed or even four for a pantechnicon king size (in which case add central legs to prevent sag). The construction remains essentially the same.

There are two main

methods of chest construction and this example uses both. The simplest and the oldest constructed chests were boarded and nailed together. These pieces have shrunk and cracked over the years. No-one really minds but today wind whistling gaps are deemed to represent bad craftsmanship. Just by ensuring the grain direction lines up you can avoid this.

If you cut a long, wide plank (or several planks joined to appear as one board) into four shorter lengths and nail them back together at right angles, the front, sides and back will all shrink equally across the grain with a slight loss of height but without any tendency for them to fall apart. A floor of loose boards resting on battens will help to keep the box square and a boarded lid will close it.

If the lid overhangs the box, here too shrinkage will have little obvious effect. Raise the floor a few inches so that you can chop out some decorative feet and you'll have a perfectly acceptable chest.

Later versions were less crude. The makers used frame and panel construction so most of the shrinkage took place harmlessly in the panels while the thin frame was securely jointed and strong enough to hold the whole piece rigid. The sides, back and top were all panelled like the front which was sometimes carved as

Edward Hopkins is studding and plasterboarding his cottage, trying to keep steps ahead of the plumber

Richard Green is working on massive laminated arches of ash on a curved balcony, for an architect's house

The ends of the chest are simple. The hole is a handle, but could be larger for easy holding

The beauty of this chest is that all the panels are designed to be the same size. This makes preparation, gluing and moulding much easier

From behind you can see how the hinges have to be positioned on the legs. That is why the top leaf interferes with the sides

The notch for the hinge in the side makes an intriguing feature

From underneath you can see how the floorboards sit on a batten

The haunched tenons on the rails look good, but must be tight

You can see already that the panels have moved in the heat of our office

The side panels have tongues joining the boards, seen here from below

well. These chests look complicated to make and indeed there are many more processes involved (although most of them are simple enough by themselves) but the overall effect is stunning and well worth the trouble.

Overall View

Our chest has panelling on the front, back and top. You could avoid panelling the back but it's the same as the front so once you're geared up for one you may as well do the other. The sides are simply vertical boarding.

The front and back frames are rebated so that the side boards can sit into them and be glued and pinned. The sides extend below the frames, where semi-circular cutouts identify two pairs of feet. Small holes pierce the sides higher up to help with ventilation and to act as carrying handles.

There are two main patterns of metal hinges which would work (butt hinges and T hinges), but this uses neither. Instead for the fun of it we made a pair of

wooden hinges and a third one as a hasp on the front.
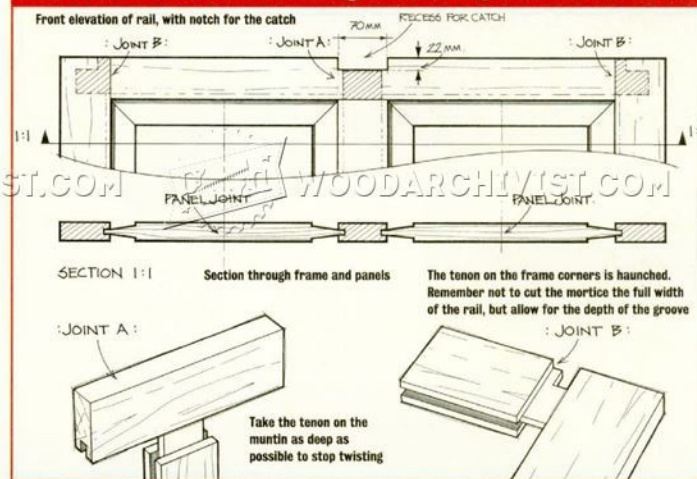
The Decorative Angle

The appearance of the front of the chest is important. Unless it has a focal point of some sort (a lock or even a

keyhole will do) it will seem blank and unfinished like an iced cake without a cherry on top. The hasp is slotted to fit over the wooden staple which is dowelled or screwed from inside the front. A hole is drilled to take

a peg which keeps the lid locked adding a final detail.

There is I admit one slight aberration. I was happy to notch out the front (for the hasp to fold into) and the back (for the hinges) but it passed me by that the hinges,

Details and sections of joints and panelled frames

Front elevation of rail, with notch for the catch

JOINT B   JOINT A   70MM   RECESS FOR CATCH   JOINT B

22 MM

1:1

PANEL JOINT   PANEL JOINT

SECTION 1:1   Section through frame and panels   The tenon on the frame corners is haunched. Remember not to cut the mortice the full width of the rail, but allow for the depth of the groove

JOINT A

JOINT B

Take the tenon on the muntin as deep as possible to stop twisting

How to make the blanket chest with wooden fittings

1 Start by planing up the boards for the sides and the panels. Cut grooves along the edge for a loose tongue to help location and gluing
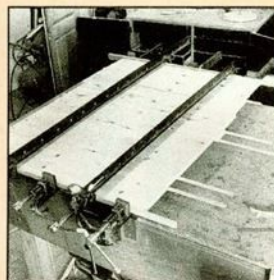
2 Because Richard has large sash cramps he was able to glue up a number of panels at a time. You can cramp panels with large G-cramps
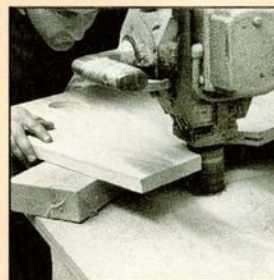
3 The side panels have a semi-circular cutout at the base to produce feet. You can wrap abrasive around a plastic bottle for hand sanding

4 If you have a router use a panel cutter for the fielded panels. Shape the panels by scoring the shoulder and then planing the bevel by hand

placed as they are near the end of the overhanging top, would hit the sides as they close. To accommodate this Richard shaped a couple of nifty cutouts and the lid now closes perfectly. Without drastically altering sizes and proportions there is no alternative apart from much narrower and weaker hinges. The cutouts are only really visible when the lid is open, when they look, as it happens, quite purposeful.
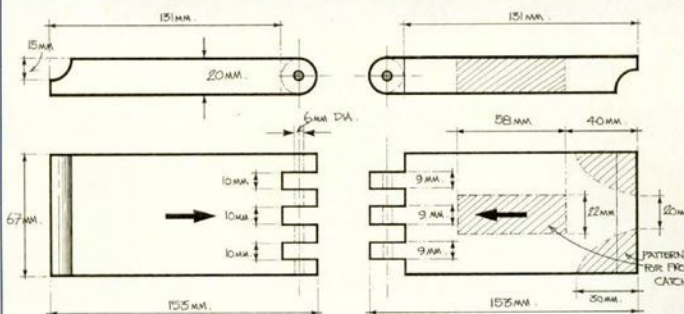
The Components

1 Mark out the components. You will have to produce panels by joining narrower boards, but it is always better to find stock wide enough if you can. Panels can be of the same thickness as the frame, in which case they are fielded on both sides. If of thinner stock, they may be fielded on the front only.
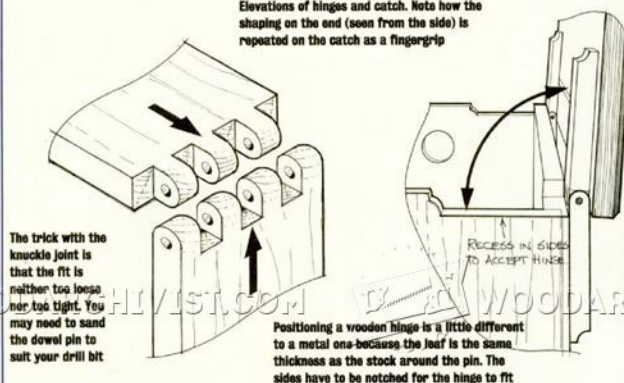
2 Join the boards which comprise the sides (A). Groove edges to be joined and fit loose tongues. This is better than a straight/butt joint because it increases the glued surface area and it helps with alignment while cramping. Use a router or a hand plough plane for the groove. Thickness a board to the width of the tongue and bandsaw it down to just the right thickness. Glue and cramp boards together using G-cramps and blocks, watching out for warping.

3 Sand the sides and trim them to the final size. Cut

out the semi-circle at the foot (with a jigsaw, bandsaw or coping saw) and finish with sandpaper around a detergent bottle. Cut the holes for the handles with a holesaw and finish with a roll
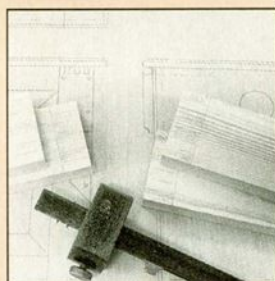
of sandpaper. The hole could be a little bit bigger than it is.

The Frames

4 Prepare the frame components. All should be to final width and thickness

but slightly overlength. Lay them out as they will be and mark them accordingly. Where a panel will fit, mark X on the inner edge, to be grooved. The procedure for standard panelling is always

Details of the hinge and catch leaves

Elevations of hinges and catch. Note how the shaping on the end (seen from the side) is repeated on the catch as a fingergrip

The trick with the knuckle joint is that the fit is neither too loose nor too tight. You may need to sand the dowel pin to suit your drill bit

Positioning a wooden hinge is a little different to a metal one because the leaf is the same thickness as the stock around the pin. The sides have to be notched for the hinge to fit

NEW TECHNIQUE

Making the knuckle joint

5 Mark out the fingers on the hinge and catch stock. Note that one part has four fingers and the other has three so that they interlock
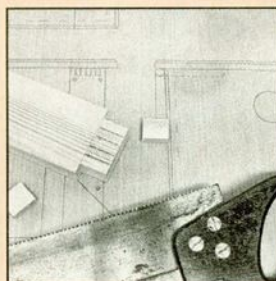
6 Cut along the fingers with a tenon saw first. You can also use the saw to cut off some waste on the three-finger leaf
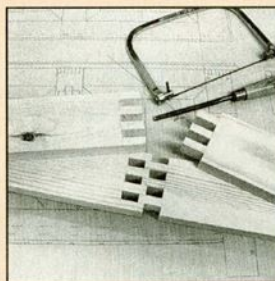
7 Cut out the waste with a coping saw, cleaning up the bottom of each notch with a chisel. Make sure the fingers are a good fit
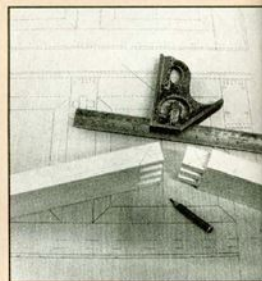
8 Use a combination square to find the position of the hinge pin. Leave a little excess on the end of the fingers in case of breakout

the same. ❶ Groove the inside edges of frame components. Allow the groove to run full length of the timber (at best using a router table or spindle moulder). ❷ Cut mortices in the stiles (B and F) at the same thickness as the groove. Remember that the tenon

(and therefore the mortice) will be narrower than the rail by the depth of the groove. ❸ Tenon the rails (C, D and G) having cut them to exact length. Remember to haunch the outer edges to fill the groove. This is a neat finish to the joint and one which helps prevent twisting.

The Panels

5 With the frames dry assembled, measure exactly the size of the panels (J and K) and then subtract a couple of smidgens. Under no circumstances should the panel be too large: far safer to touch under. Join the panels as necessary, trim the panel stuff to size.

6 Fielding the panels can be done by hand or by machine. By machine, nothing beats a spindle moulder. By hand (GW 17:70), at least start by cutting the raised shoulder first with a router, or face down on a tablesaw with crown guard removed (exercising great care and using our Shaw guard hold-down on page 28). Avoid using a radial arm saw for this because unless the panel is dead flat there is a risk of cutting too deep.

Failing all this, score the shoulder heavily with a craft knife. Using a shoulder plane or a bullnose plane (or any plane where the blade extends to the side of the sole) chamfer the edges of the panel down. When planing the end-grain beware of grain breaking out at the end. Either plane in from the far

The history of chests and trunks

The earliest known chests or wooden storage boxes were made in Egypt about 1300 BC. The term trunk probably came from the ancient practice of hacking out the inside from a tree trunk. These dug out chests were later fitted with arched lids. In medieval England, coffers were portable wooden strongboxes covered in thick leather. They were made by a specialist for storing clothes and valuables. The mule chest and the blanket chest are refinements which often include drawers and are indeed the forerunner of the chest of drawers. They have been made by many joiners and cabinetmakers since the late 16th century.

end, or complete the ends before beginning the sides.

Plane (and knife) until the panel edge is sufficiently pointed to just squeeze into the groove. It must be neither

The end-grain on the knuckle joint makes a wooden hinge look so good

so tight as to bulge the frame nor so loose as to rattle. Take care at the corners where the fielding meets in a mitre. Practice on wastewood until you've got the hang of it. When it fits, clean it carefully with sandpaper on a block.

7 Clean up the groove edges of the frames; in a minute you won't be able to get at them again. Dry assemble the frames with panels. Cramp them tight and check for fit. Disassemble. Apply glue carefully to mortices and tenons. No glue should come

in contact with panels. Cramp tight and check for square although with close fitting panels.

8 Rebate with a router the edges of the front and back frames to accept the sides. You might have considered this easier before assembly, but the edges would have been liable to damage in the cramping.

Trim all the rails flush with the frame. Sand the three frames and the faces of the panels.

9 Nail the battens (cut slightly short in case the side shrinks) on the lower inside of the sides, to support the floor. Cut the floorboards to a snug fit both lengthwise and widthways. These boards do not need to be tongued and grooved.

Glue the front and back frames to the sides, reinforcing the joint if you wish with small nails punched below the surface and then filled. Check that the assembly is square but panic not if it isn't. Just eas

Cutting List for a Blanket Chest

	MATERIAL	QTY	LENGTH	WIDTH	THKNS
A Front and back leg stile	Pine	4	539mm 21¼in	68mm 2⅝in	25mm 1in
B Front and back top rail	Pine	2	808mm 31¹⁵⁄₁₆in	57mm 2¼in	25mm 1in
C Front and back bottom rail	Pine	2	808mm 31¹⁵⁄₁₆in	78mm 3⅛in	25mm 1in
D Front and back muntin	Pine	2	413mm 16¼in	68mm 2⅝in	25mm 1in
E Front, back and top panel	Pine	4	349mm 13¾in	349mm 13¾in	25mm 1in
F Side	Pine	2	536mm 21⅛in	396mm* 15⅝in	25mm 1in
G Top rail	Pine	2	813mm 32in	66mm 2⅝in	25mm 1in
H Top stile	Pine	2	460mm 18⅛in	94mm 3¾in	25mm 1in
J Top muntin	Pine	1	400mm 15¾in	68mm 2⅝in	25mm 1in
K Hinge and catch	Pine	6	150mm 5⅞in	68mm 2⅝in	25mm 1in
L Floor	Pine		808mm 31¹⁵⁄₁₆in	370mm* 14½in	25mm 1in
M Floor batten	Pine	1	740mm 30in	25mm 1in	25mm 1in
N Staple	Pine	1	50mm 2in	50mm 2in	25mm 1in

Cutting lists always give the full length of a piece including the joint, but not wastage. Allow at least 25mm (1in) extra for length and 5mm (³⁄₁₆in) on the width and thickness of sawn stock
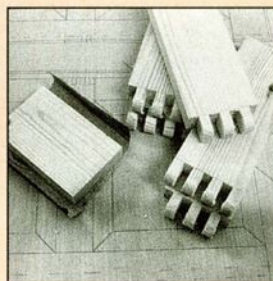* Make up several boards to this width

## Cleaning up and assembling the hinge or catch
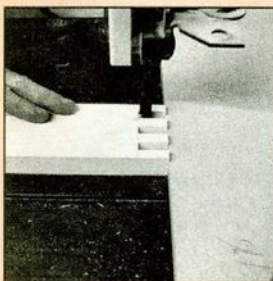
9 You can use a bandsaw for cutting the fingers. You can even remove the waste with the saw by moving across the waste bit by bit

10 Round the end of the fingers with a bandsaw, or by hand with a coping saw, plane, rasp and abrasive. Keep checking the fit
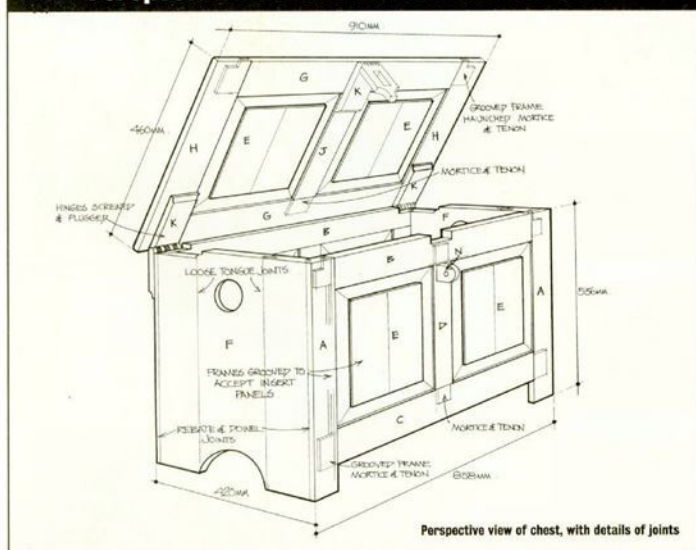

11 Clean up all the hinge and catch components. In an ideal world all the parts should be interchangeable, but identify the pairs
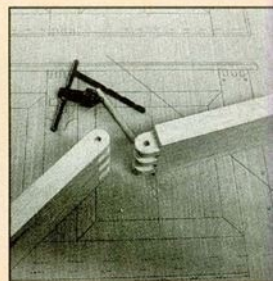
12 Preferably drill the holes for the pin in a pillar drill or drillstand. You can do this with the joint assembled, held with tape

Perspective View of Panelled Blanket Chest

Perspective view of chest, with details of joints

the floorboards down onto the battens and it'll have no choice. Keep cramps on until the glue is dry. If this joint is less than satisfactory, glue in triangular fillets later to reinforce the chest.

The Hinges

10 Begin with perfectly dimensioned timber or you won't stand a chance. There is nothing particularly difficult about the hinges if they are approached calmly. Nevertheless make a spare. We cut the hinge fingers first, and then cut the leaves to length. Try to take each pair

of hinge and hasp leaves from the same board for consistent grain.

Trim the ends dead square. Mark back the square shoulder line and the circles on the sides. Divide the width into an odd number of equal segments. Mark these segments with a marking gauge on male and female members alike. Hatch in the waste: confusion here is disastrous so watch out.

11 Bandsaw precisely on the wastewood side of each line up to the shoulder line. Set a fence on the bandsaw and repeat each cut on each hinge. If you cut this by hand, use your finest, sharpest saw. Remove the waste. A coping saw and chisel will do it just as they do for dovetailing, but if you've begun on a bandsaw you may as well continue. Set a long stop behind the blade at right angles to it so that you cannot cut beyond the shoulder line. Successive cuts will now eat away the waste. At the

last the workpiece can be gently moved from side to side touching the stop, to finishing cut cleanly.

12 Test fit one female to another male (they should all be identical). If the joint is tight, adjust. If it's loose, start again! Plane or sand the ends over until they are semi-circular and down to the marking on the edges. Finish with sandpaper.

Test drills and dowels nominally 6mm diameter for a good snug fit for the pin. You may have to adjust a thicker dowel.

Drill a 6mm hole, using a drillstand and a sharp bit, drilling from each edge and meeting in the middle, with the hinge assembled. Take apart and clean up the insides of the joints.

Cut short lengths of 6mm dowel (or make your own). Sharpen one end to a bit of a point. Drive it through a similarly drilled hole in a piece of wastewood. This might burnish it down to size if necessary. Excessive force must not be needed: it is too easy to burst the hinge, especially in pine.

Assemble the male to female ends of each hinge. See that they are likely to

rotate freely. Tap the dowel through the assembled knuckle. Gently test it for hinging. If the dowel is a little loose the smallest of glue in one end segment alone will secure it. Trim the dowel flush with the hinge.

13 Leaving the hinges assembled, cut each arm to length. Mould the little concave detail in each end using a router table. This can be replaced with a chamfer if you're lazy or only have hand-tools, but such touches do count. Notice that the moulding is reversed on the hasp where it acts as a fingergrip. Scoop out the side curves on the hasp with a coping saw and sandpaper.

14 Cut the notch in the front panel (to accept the hasp) and two in the back panels (to accept the hinges). Continue the back notches along the side, having marked off from the hinge profile. Use a coping saw and a chisel for this final awkward shape.

15 Fix the hinges, with screws or dowels, in from the back and up into the top. Fit a couple of screws or dowels first to make sure the top aligns, ensuring that the muntin on the top aligns with the muntin on the front.

16 Similarly, screw the hasp in place. Cut and shape the staple and screw this from inside the chest, checking as you do that the hasp will slide smoothly over it. Cut a peg to fit the hole.

17 Finish the chest with wax. Paint a liquid wax (see page 82) on all external surfaces and edges: the inside is probably better left bare. It won't be bare for long. A space like this is a magnet. Next time you look inside there'll be stuff you didn't realise you couldn't live without.

13 You may have to alter the diameter of the dowel to suit the hole. Glue it into the top finger to stop it falling out, then trim it clean

Jargon Busting

Fielding
The bevelling around a panel. This can be curved if you want, but you'll need a special router cutter really

Raised fielding
The bevelling around a panel which finishes in a little square step up to the centre of the panel (GW 17:70). There is debate over raised fielded panels, but this is a popular definition (GW 15:61)

Stiles
The main uprights in frame and panel construction. They are normally morticed, but do not have to be the longest components, though that is usually the case on doors

Rails
The cross-members in frame and panel, they are tenoned

Muntin
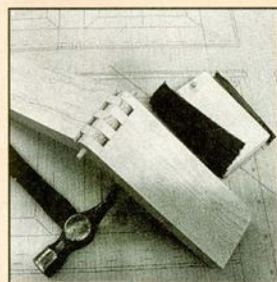The secondary uprights in a frame, parallel to the stiles

Hasp
A piece of wood or metal that is hinged. It has a slot that fits over a staple, through which a padlock or peg can be fitted

Spindle moulder
Much like an upside down router, fixed under a table. Instead of one cutter it has a cutterblock on the main spindle. You can fit any shape of cutter into the block, and grind your own cutters

Crown guard
Guard that protects top of circular saw blade. Can be removed but you must not remove the riving knife which stops the wood blade binding in the wood and kicking